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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/814,219	03/22/2001	Hoi-Sing Kwok	016660-072	2304

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EXAMINER

LAMB, TWYLER MARIE

ART UNIT PAPER NUMBER

2622

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/814,219

Applicant(s)

KWOK ET AL.

Examiner

Twyler M. Lamb

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 22 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

  
TWYLER LAMB  
PRIMARY EXAMINER

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-3, 5, 8 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Holley et al. (Holley) (US 6,700,679).

With regard to claim 1, Holley discloses an apparatus (Figure 10,) for producing a print from a digital image (col 1, lines 23-27), comprising: (a) a display device (workstation computer and monitor 100) for generating an image from digital image data (col 8, lines 46-50), (b) means (RGB sequencer 110) for exposing said image separately to red, green and blue light (col 9, lines 13-16; col 11, lines 17-22), (c) optical projection means (digital drawer 104, with LCD module 102, with video electronics and dual axis micro-stepping positioners 114 and 116; focusing lens 120) for projecting said

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exposed image onto photosensitive paper or film (photographic media 118) (col 9, lines 18-26), and (d) means (exposure task controller) for controlling the duration and sequence of the exposure of said image to red, green and blue light (col 11, lines 9-23).

With regard to claim 2, Holley also discloses wherein said display device is a reflective liquid crystal on silicon microdisplay (col 9, lines 18-26).

With regard to claim 3, Holley also discloses wherein said display device is a digital mirror display device comprising micro-machined mirrors on silicon (col 5, lines 40-61).

With regard to claim 5, Holley also discloses wherein said display device is a transmissive thin film transistor active matrix liquid crystal display (col 5, lines 62-65).

With regard to claim 8, Holley also discloses comprising a single source of light and further comprising red, green and blue filters to generate said red, green and blue light, wherein operation of said filters is controlled by said control means (col 3, lines 31-32; col 11, lines 16-22).

With regard to claim 9, Holley also discloses wherein said control means comprises a computer (col 8, line 44 – col 9, line 6; col 11, lines 16-22).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. Claims 4, 6, 7 and 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holley et al. (Holley) (US 6,700,679) in view of Wong et al. (Wong) (US 6,580,490).

With regard to claims 4, 6 and 14, Holley does not specifically teach wherein said red, green and blue light is polarised prior to exposing said image, and said display device reflects said red, green and blue light with a rotated polarization from pixels that are in an on condition.

Wong discloses printer that includes wherein said red, green and blue light is polarised prior to exposing said image, and said display device reflects said red, green and blue light with a rotated polarization from pixels that are in an on condition (col 9, line 63 – col 10, line 35).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Holley to include wherein said red, green and blue light is polarised prior to exposing said image, and said display device reflects said red, green and blue light with a rotated polarization from pixels that are in an on condition as taught by Wong. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Holley by the teaching of Wong to decrease light leakage as taught by Wong in col 10, lines 4-13.

With regard to claim 7, Holley does not specifically teach comprising separate sources of red, green and blue light, and wherein the operation of said separate sources of red, green and blue light is controlled by said control means.

Wong discloses printer that includes comprising separate sources of red, green and blue light, and wherein the operation of said separate sources of red, green and blue light is controlled by said control means (col 15, line 62- col 16, line 2).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Holley to include comprising separate sources of red, green and blue light, and wherein the operation of said separate sources of red, green and blue light is controlled by said control means as taught by Wong. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Holley by the teaching of Wong to provide light at a wavelength that is best suited to the sensitivity of the photosensitive media as taught by Wong in col 15, line 56- col 16, line 2.

With regard to claim 10, Holley discloses an apparatus (Figure 10) for producing a print from digital image (col 1, lines 23-27), comprising: (a) a light source (light source 106), (b) means (filter 107) for generating a collimated light beam from said source (col 8, line 67 – col 9, line 2), (c) a cold mirror for reflecting light of a wavelength shorter than a predetermined cut-off wavelength (col 5, lines 40-61), (d) a UV filter for transmitting light of a wavelength longer than a second predetermined cut-off wavelength (col 8, line 63 – col 9, line 2), (e) colour filter means for selectively passing red, green or blue light, (f) a reflective display device for displaying a digitally generated image (col 3, lines 31-32; col 11, lines 16-22), (h) means (digital drawer 104, with LCD module 102, with video electronics and dual axis micro-stepping positioners 114 and 116; focusing lens 120) for projecting said reflected light onto a photosensitive film or paper (photographic media

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118) (col 9, lines 18-26), and (i) control means (computer 100) for controlling the operation of said apparatus (col 8, lines 44 – col 9, line 6).

Holley does not specifically teach a polarising beam splitter for directing polarised red, green or blue light onto said display device, and for allowing transmission of red, green or blue light reflected from on pixels of said display device.

Wong discloses printer that includes a polarising beam splitter for directing polarised red, green or blue light onto said display device, and for allowing transmission of red, green or blue light reflected from on pixels of said display device (col 9, line 63 – col 10, line 35).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Holley to include a polarising beam splitter for directing polarised red, green or blue light onto said display device, and for allowing transmission of red, green or blue light reflected from on pixels of said display device, as taught by Wong. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Holley by the teaching of Wong to decrease light leakage as taught by Wong in col 10, lines 4-13.

With regard to claim 11, Holley discloses an apparatus (Figure 10) for producing a print from digital image (col 1, lines 23-27), comprising: (a) a light source (light source 106), (b) means (filter 107) for generating a collimated light beam from said source (col 8, line 67 – col 9, line 2), (c) a cold mirror for reflecting light of a wavelength shorter than a predetermined cut-off wavelength (col 5, lines 40-61), (d) a UV filter for transmitting light of a wavelength longer than a second predetermined cut-off wavelength (col 8, line

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63 – col 9, line 2), (e) colour filter means for selectively passing red, green or blue light, (f) a transmissive display device for displaying a digitally generated image (col 3, lines 31-32; col 11, lines 16-22), (i) means (digital drawer 104, with LCD module 102, with video electronics and dual axis micro-stepping positioners 114 and 116; focusing lens 120) for projecting said reflected light onto a photosensitive film or paper (photographic media 118) (col 9, lines 18-26), and (j) control means (computer 100) for controlling the operation of said apparatus (col 8, lines 44 – col 9, line 6).

Holley does not specifically teach a first polariser for directing polarised red, green or blue light onto said display device, nor a second polariser for allowing transmission of red, green or blue light transmitted through on pixels of said display device.

Wong discloses printer that includes a polarising beam splitter for directing polarised red, green or blue light onto said display device, and for allowing transmission of red, green or blue light reflected from on pixels of said display device (col 9, line 63 – col 10, line 35).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Holley to include a polarising beam splitter for directing polarised red, green or blue light onto said display device, and for allowing transmission of red, green or blue light reflected from on pixels of said display device, as taught by Wong. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Holley by the teaching of Wong to decrease light leakage as taught by Wong in col 10, lines 4-13.



With regard to claim 12, Holley discloses an apparatus for producing a print from a digital image, comprising: (a) sources (light source 106) of red, green and blue light (col 3, lines 31-32; col 11, lines 16-22), (b) means (filter 107) for generating a collimated light beam from said sources (col 8, line 67 – col 9, line 2), (c) a reflective display device for displaying a digitally generated image (col 3, lines 31-32; col 11, lines 16-22), (e) means (digital drawer 104, with LCD module 102, with video electronics and dual axis micro-stepping positioners 114 and 116; focusing lens 120) for projecting said reflected light onto a photosensitive film or paper (photographic media 118) (col 9, lines 18-26), and (f) control means (computer 100) for controlling the operation of said apparatus (col 8, lines 44 – col 9, line 6).

Holley does not specifically teach a polarising beam splitter for directing polarised red, green or blue light onto said display device, and for allowing transmission of red, green or blue light reflected from on pixels of said display device.

Wong discloses printer that includes a polarising beam splitter for directing polarised red, green or blue light onto said display device, and for allowing transmission of red, green or blue light reflected from on pixels of said display device (col 9, line 63 – col 10, line 35).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Holley to include a polarising beam splitter for directing polarised red, green or blue light onto said display device, and for allowing transmission of red, green or blue light reflected from on pixels of said display device, as taught by Wong. It would have been obvious to one of ordinary skill in the art at the time of the

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invention to have modified Holley by the teaching of Wong to decrease light leakage as taught by Wong in col 10, lines 4-13.

With regard to claim 13, Holley discloses an apparatus (Figure 10) for producing a print from digital image (col 1, lines 23-27), comprising: (a) sources (light source 106) of red, green and blue light (col 3, lines 31-32; col 11, lines 16-22), (b) means (filter 107) for generating a collimated light beam from said source (col 8, line 67 – col 9, line 2), (c) a transmissive display device for displaying a digitally generated image (col 3, lines 31-32; col 11, lines 16-22), (f) means (digital drawer 104, with LCD module 102, with video electronics and dual axis micro-stepping positioners 114 and 116; focusing lens 120) for projecting said reflected light onto a photosensitive film or paper (photographic media 118) (col 9, lines 18-26), and (g) control means (computer 100) for controlling the operation of said apparatus (col 8, lines 44 – col 9, line 6).

Holley does not specifically teach a first polariser for directing polarised red, green or blue light onto said display device, nor a second polariser for allowing transmission of red, green or blue light transmitted through on pixels of said display device.

Wong discloses printer that includes a polarising beam splitter for directing polarised red, green or blue light onto said display device, and for allowing transmission of red, green or blue light reflected from on pixels of said display device (col 9, line 63 – col 10, line 35).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Holley to include a polarising beam splitter for directing

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polarised red, green or blue light onto said display device, and for allowing transmission of red, green or blue light reflected from on pixels of said display device, as taught by Wong. It would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Holley by the teaching of Wong to decrease light leakage as taught by Wong in col 10, lines 4-13.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Twyler Lamb whose telephone number is 703 - 308-8823. The examiner can normally be reached on M-TH (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward L Coles can be reached on 703-308-4712. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9314 for After Final communications.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, DC 20231

or faxed to:

(703) 872-9314

(for informal or draft communications, such as proposed amendments to be discussed at an interview; please label such communications "PROPOSED" or "DRAFT")

or hand-carried to:

Crystal Park Two

2121 Crystal Drive

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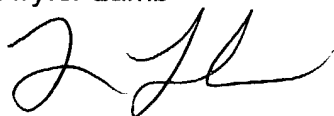
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Sixth Floor (Receptionist)

Twyler Lamb

A handwritten signature in black ink, appearing to read 'Twyler Lamb', with a stylized, cursive script.

September 29, 2004